

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

INTERIM

FLOODPROOFING - STRUCTURES

(Number)

CODE 714

(Expires March 2005)

DEFINITION

Protection of permanent structures from the effects of flooding.

PURPOSES

To reduce or eliminate damages to permanent structures as a result of natural flooding of low-lying areas along streams, rivers and tidal areas.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to existing permanent residential and commercial or institutional structures, which are located in floodprone areas.

CRITERIA

Planning and design of floodproofing measures shall be based on techniques and procedures presented in the latest edition of the Federal Emergency Management Agency publication, Engineering Principles and Practices for Retrofitting Flood Prone Residential Buildings; and shall comply with all Federal, State and local laws and regulations.

The potential biological, chemical, and physical effects of increased flood stage in the adjacent floodplain areas shall be considered in the choice of floodproofing measures. Relocating structures to zones outside the 500 year flood hazard area shall always be considered and shall be the baseline to which all other alternatives are compared. The potential effects of increased flood stage or increased velocity of flood flows in the vicinity of adjacent structures and on natural habitat, travel corridors, and

refugia shall be recognized. Appropriate hydraulic analysis shall be performed to determine if such effects are significant. Where effects are significant, alternative floodproofing measures shall be considered and preferred to the extent practicable. Until such time as a statistically reliable database of floodway characteristics, floodproofing alternatives, and potential effects has been established, it should be recognized that effects are dependent on the biological, chemical, and physical parameters of a particular floodway. Detailed analysis may be necessary for any structural measures in floodways where adequate hydrologic models are not available.

The human social, public health and safety effects of floodproofing measures shall be evaluated and documented as appropriate to demonstrate the benefits of individual measures. Detrimental aspects, if any, shall also be documented.

Floodproofing which involves the alteration of a historical site or significant landscape disturbing activities, is considered an undertaking with regard to cultural resources.

Floodproofing designs and structural modifications shall protect cultural resources and cultural values. The National Historic Preservation Act, Section 106 shall be followed.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

CONSIDERATIONS

- ❖ The visual effects of floodproofing measures on the landscape shall be considered.
- ❖ The protection of private and public properties, including undeveloped areas, from the adverse effects of development within hazardous or sensitive areas of stream corridors will be considered and evaluated prior to floodproofing construction.
- ❖ Construction activities associated with this Standard should provide no net loss of natural wetland and floodplain functions.
- ❖ Protection of lakes, ponds and wetlands not hydrologically connected to the stream corridor system will be evaluated and considered prior to floodproofing construction.
- ❖ The prevention of degradation of surface and subsurface water drainage and flow nets will be evaluated and addressed.
- ❖ Development will not adversely impact the functional properties of stream corridors.
- ❖ The conservation of significant natural resources and the protection of sensitive or unique fish and wildlife habitats, vegetation, and ecological relationships will be evaluated and addressed prior to floodproofing construction.

PLANS AND SPECIFICATIONS

Detailed plans and specifications shall be developed for the implementation of floodproofing measures.

Any plans and specifications developed will not result in adverse impacts to federally protected species.

All activities associated with this Standard will be in accordance with appropriate state and federal laws and regulations.

OPERATION AND MAINTENANCE

An Operation and Maintenance (O&M) plan shall be developed and provided to landowner(s). The O&M plan shall provide and describe those activities necessary to properly maintain the measures throughout the operational life of the measures.

REFERENCES

- *Engineering Principles and Practices for Retrofitting Flood Prone Residential Buildings, FEMA*
- *National Engineering Handbook, Chapter 6 - Structures, USDA-NRCS*